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Cumulations of over 29,000 abstracts of papers, reports and patents published on electronic subjects from 1957 through 1964

SUBJECT CATEGORIES

Devices

1 VACUUM AND GAS TUBES*
(Theory, Characteristics, Fabrication, Measurement)

2 SEMICONDUCTOR DIODES AND TRANSISTORS
(Theory, Characteristics, Fabrication, Measurement)

3 MASERS AND LASERS
(Theory, Characteristics, Fabrication, Measurement, Applications)

4 OPTICAL, THERMAL AND MAGNETIC DEVICES
(Photoconductive, Photoelectric and Photovoltaic Devices, Photodiodes and Phototransistors; Thermistors, Thermoelectric Devices; Isolators, Phase Shifters, Circulators, Magnetic Amplifiers, Logic Elements, etc.)

5 THIN FILMS
(Growth, Structure, Electrical Properties, Magnetic Properties, Optical Properties, Thin Film Devices and Circuits)

Circuits

6 CIRCUIT THEORY*
(Including Filters and Other Passive Circuits)

7 MICROELECTRONICS
(Theory and Design, Characteristics, Fabrication, Types, Functions, Applications)

8 AMPLIFIERS, OSCILLATORS AND WAVEFORM GENERATORS
(Theory and Design, Analysis, Stabilization, Classification by Frequency, Function, Mode of Operation, Active Element, etc.; Excluding Masers and Lasers)

9 SWITCHES, CONVERTERS AND PULSE CIRCUITS
(Including Modulators, Detectors, Frequency and Power Converters)

Systems

10 COMMUNICATIONS
(Including Communication Theory, Information Theory, Radio, Television, Telephony, Telegraphy, Radar, Telemetry, Microwaves)

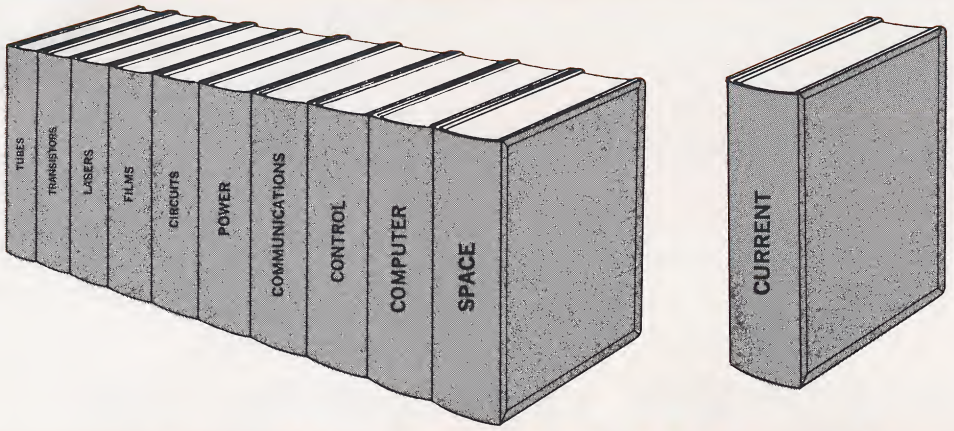
11 CONTROL AND INSTRUMENTATION*
(Including Automatic Control Theory, Feedback Systems, Sampled Data Control Systems, Servomechanisms, Cybernetics, Industrial Electronics; Meters, Nuclear Instrumentation, etc.)

12 COMPUTER ELECTRONICS
(Including Logic and Switching Theory, Digital Computers and Systems, Computer Devices and Circuits, Storage and Input-Output, Analog and Hybrid Computers, Real-Time Systems)

13 SPACE ELECTRONICS
(Including Electrical Power, Guidance and Control, Environmental Control, Communication, and Instrumentation Subsystems)

14 POWER*

*in preparation



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Solid State Chemistry*
- ___ Solid State Compounds*
- ___ Solid State Reactions*
- ___ Surface Chemistry
- ___ Specific Materials*

Phase Properties
- ___ Analysis of Alloys
- ___ Phase Diagrams
- ___ Changes of State
- ___ Phase Transformations
- ___ Structure of Alloys
- ___ Solubility in Solids
- ___ Segregation
  - ___ Zone Melting and Refining
- ___ Specific Materials*

Crystal Growth
- ___ Theory
- ___ Equipment
- ___ Special Properties
- ___ Solution Growth
- ___ Melt Growth
  - ___ Crystal Pulling
  - ___ Zone Melting
  - ___ Melt Cooling
- ___ Vapor Growth
- ___ Solid State Growth
- ___ Fusion Growth
- ___ HT-HP Growth
- ___ Growth of Films
- ___ Growth of Whiskers
- ___ Specific Materials

Crystal Structure
- ___ Theory
- ___ Analysis
- ___ Crystal Lattices
- ___ Order-Disorder
- ___ Structure of Surfaces
- ___ Structure of Films
- ___ Structure of Whiskers
- ___ Specific Materials*

Crystal Defects
- ___ Theory
- ___ Analysis
- ___ Generation
- ___ Vacancies
  - ___ Color Centers
- ___ Interstitials
- ___ Dislocations
- ___ Grain Boundaries
- ___ Stacking Faults
- ___ Specific Materials*

Crystal Impurities
- ___ Analysis
- ___ Purification
- ___ Doping
- ___ Diffusion
- ___ Interactions
- ___ Specific Materials*

Crystal Surfaces
- ___ Surface Structure
- ___ Surface Chemistry
  - ___ Oxidation
  - ___ Sorption
- ___ Machining
- ___ Etching
- ___ Cleaning
- ___ Coatings and Attachments
  - ___ Plating
  - ___ Alloying
- ___ Specific Materials*

Environmental Effects
- ___ Heat Treatment
- ___ Deformation
- ___ Radiation
  - ___ Neutrons
  - ___ Electrons
  - ___ Ions
  - ___ X-Rays
- ___ Ambient Atmosphere
- ___ Specific Materials*

PHYSICS

Crystal Physics
- ___ Electronic Properties
- ___ Binding Properties
- ___ Energy Band Structure
- ___ Lattice Vibrations (Phonons)
- ___ Specific Materials*

Dielectrics
- ___ Dielectric Constant
- ___ Charge and Current; Loss
- ___ Ferroelectricity
  - ___ Ferroelectric Domains
  - ___ Ferroelectric Devices
- ___ Piezoelectricity
  - ___ Piezoelectric Devices
- ___ Electrostriction
  - ___ Electrostrictive Devices
- ___ Dielectric Films
- ___ Specific Materials*
- ___ Dielectric Devices

Carrier Properties
- ___ Electrons, Holes and Excitons
- ___ Donors and Acceptors
- ___ Concentrations
- ___ Generation
- ___ Recombination (Lifetime)
  - ___ Traps
- ___ Effective Mass
- ___ Scattering
- ___ Mobility
- ___ Diffusion
- ___ Injection, Extraction and Storage
- ___ Spin Resonance
- ___ Specific Materials*

Conductivity (Resistivity)
- ___ Theory
- ___ Measurement
- ___ Parameter Effects
  - ___ Piezoresistivity
- ___ Rectification
- ___ Breakdown
- ___ Surface Conductivity
- ___ Tunneling
- ___ Connections
- ___ Noise
- ___ Thin Films
- ___ Specific Materials*

Superconductivity
- ___ Theory
- ___ Energy Gap
- ___ Transitions
- ___ Thin Films
- ___ Specific Materials*
- ___ Superconductive Devices

Ferro- & Ferrimagnetism
- ___ Theory
  - ___ Exchange Processes
  - ___ Spin Waves
- ___ Measurement
- ___ Spontaneous Magnetization
- ___ Induced Magnetization
- ___ Magnetization Reversal
- ___ Barkhausen Effect
- ___ Einstein-deHaas Effect
- ___ Thermomagnetic Effect
- ___ Hysteresis
  - ___ Coercive Force
  - ___ Remanence
  - ___ Hysteresis Loss
- ___ Magnetic Anisotropy
- ___ Magnetic Structure
- ___ Magnetic Domains
- ___ Resonance
- ___ Antiferro(i)magnetism
- ___ Thin Films
- ___ Specific Materials*
- ___ Ferro(i)magnetic Devices

Paramagnetism
- ___ Susceptibility
- ___ Paramagnetic Resonance
  - ___ Specific Ions

Resonance
- ___ Ferro(i)magnetic
- ___ Antiferro(i)magnetic
- ___ Paramagnetic
  - ___ ENDOR
- ___ Nuclear Magnetic
  - ___ Proton
- ___ Nuclear Quadrupole
- ___ Specific Materials*

Crystal (Ligand) Fields*
- ___ Specific Materials*

Optical Properties
- ___ Spectroscopy
- ___ Absorption (Transmission)
  - ___ Filters
- ___ Radiation
- ___ Luminescence
  - ___ Electroluminescence
  - ___ Fluorescence
- ___ Mössbauer Effect
- ___ Photoconductivity
  - ___ Photoconductive Devices
- ___ Photovoltaic Effect
  - ___ Photovoltaic Devices
- ___ Photoelectric Effect*
  - ___ Photoelectric Devices*
- ___ Photomagnetic Effect
- ___ Reflection
- ___ Refraction
- ___ Lenses*
- ___ Polarization
  - ___ Faraday Effect
  - ___ Kerr Effect
  - ___ Optical Activity
- ___ Thin Films
- ___ Specific Materials*

Magnetoelectricity
- ___ Magnetoresistance
  - ___ Magnetoresistive Devices
- ___ Hall Effect
  - ___ Hall Effect Devices
- ___ Cyclotron Resonance
- ___ Spin Resonance
- ___ Acoustomagnetoelectric Effect
- ___ Plasmas*
- ___ Corbino Disks
- ___ Specific Materials*
- ___ Magnetoelectric Devices

Thermal Properties
- ___ Thermal Expansion
- ___ Specific Heat
- ___ Thermal Conductivity
- ___ Thermoelectricity
  - ___ Thermoelectric Devices
- ___ Thermomagnetism
- ___ Specific Materials*

Mechanical Properties
- ___ Elasticity
- ___ Plasticity (Creep)
- ___ Fracture
- ___ Hardness (Brittleness)
- ___ Ultrasonic Properties
- ___ Internal Friction
- ___ Specific Materials*

Surfaces
- ___ Chemistry
- ___ Structure
- ___ Processing
  - ___ Etching
- ___ States (Energy Levels)
- ___ Field Effect
- ___ Conductance (Channels)
- ___ Mobility & Breakdown
- ___ Barriers (Inversion Layers)
- ___ Thermionic Emission*
- ___ Photoemission*
- ___ Secondary Emission*
- ___ Field Emission*
- ___ Specific Materials*

Thin Films
- ___ Growth
- ___ Structure
- ___ Environmental Effects
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- ___ Optical Properties
- ___ Thermal Properties
- ___ Mechanical Properties
- ___ Devices
- ___ Microelectronics*
- ___ Specific Materials*

Measurement Methods*
- ___ Metallographic*
- ___ Radiation*
  - ___ X-Ray*
  - ___ Electron*
  - ___ Neutron*
- ___ Electrical*
  - ___ Resistivity*
  - ___ Hall Effect*
  - ___ Cyclotron Resonance*
- ___ Magnetic*
  - ___ ESR*
  - ___ NMR*
  - ___ deHaas-van Alphen*
- ___ Optical*
  - ___ Spectrographic*
  - ___ Mössbauer*
- ___ Thermal*
- ___ Mechanical*
  - ___ Ultrasonic*
  - ___ Internal Friction*

ELECTRONIC DEVICES

Electron Tubes*
- ___ Vacuum Diodes*
- ___ Vacuum Grid Tubes*
- ___ Gas Grid Tubes*
  - ___ Thyratrons*
- ___ Ignitrons*
- ___ Electron Beam Tubes*
  - ___ Cathode Ray Tubes*
  - ___ Camera Tubes*
- ___ Traveling Wave Tubes*
- ___ Magnetrons & Klystrons*
- ___ Counting Tubes*
- ___ Phototubes*

Semiconductor Diodes
- ___ Point Contact
- ___ Junction
  - ___ Tunnel Devices
- ___ Surface Barrier

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___ Voltage Regulators
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___ Photodiodes
___ Solar Cells
___ Phototransistors
___ Photovoltaic*
___ Photoemissive*
___ Luminescent
___ Lasers
___ Energy Converters
___ Radiation Detectors
___ Other

Masers and Lasers
___ Theory
___ Solid State
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___ Gas
___ Liquid
___ Hybrid

Thermal Devices
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___ Thermoelectric Devices
___ Bolometers*
___ Heat Pumps*
___ Other

Magnetic Devices
___ Attenuators
___ Isolators
___ Phase Shifters
___ Circulators (Duplexers)
___ Amplifiers
___ Logic Elements
___ Other

Dielectric (Ferroelectric) Devices
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___ Transducers
___ Memory Cells
___ Amplifiers
___ Other

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___ Cryotrons
___ Crowe Cells
___ Cryosars
___ Solenoids
___ Other

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___ Piezoelectric
___ Electrostrictive
___ Other

Other Devices
___ Resistors
___ Inductors
___ Symmetrical Varistors
___ Magnetostrictive Devices
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___ Phase Shifters
___ Attenuators
___ Isolators
___ Circulators
___ Other

ELECTRONICS

Basic Circuits
___ Circuit (Network) Theory*
___ Filters*
___ Microelectronics*
___ Amplifiers
___ Parametric Amplifiers
___ Oscillators
___ Switching Circuits
___ Signal Converters
___ Modulators
___ Detectors
___ Frequency Converters
___ Wave Generators
___ Pulse Circuits

Communications*
___ Communications Theory*
___ Information Theory*
___ Radio & Television*
___ Telephony & Telegraphy*
___ Telemetry*
___ Radar*
___ Microwaves*
___ Recording
___ Audio*

Energy Conversion
___ Optoelectric
___ Solar Cells
___ Thermoelectric
___ Fuel Cells*

Power*
___ Generation*
___ Transmission*
___ Rectification*
___ Regulation*
___ Conversion*
___ Switching*
___ Amplification

Control*
___ Feedback Systems*
___ Sampled Data Systems*
___ Optimal Systems*
___ Remote Control*

Instrumentation*
___ Meters*
___ Oscilloscopes*
___ Nuclear Instruments*
___ Industrial Instruments*

Computer Electronics
(see under Computers)

Space Electronics*
(see under Astronautics)

COMPUTERS

Systems
___ Digital Computers
___ Design & Organization
___ Digital Arithmetic
___ Error Detection
___ Analog Computers
___ Techniques & Systems
___ Subassemblies
___ Mathematics & Programming
___ Hybrid Computers
___ Analog-Digital Conversion
___ Real-Time Systems
___ Data Acquisition & Transmission
___ Special Purpose Computers
___ Digital Differential Analyzers
___ Specific Computers

Switching Theory
___ Switching Functions
___ Automata
___ Combinational Networks
___ Sequential Networks

Computer Devices & Circuits
___ Electron
___ Semiconductor
___ Diode
___ Transistor
___ Parametron
___ Magnetic
___ Cryogenic
___ Other
___ Sequential & Waveforming Circuits
___ Stables & Unstables
___ Counters & Scalers
___ Shift Registers

Digital Storage
___ Storage Organization
___ Random Access
___ Static Magnetic
___ Static Nonmagnetic
___ Dynamic (Volatile)
___ Read-Only
___ Sequential Access
___ Moving (Removable) Media

Input-Output

Computer Programming
___ Basic Principles
___ Machine Oriented
___ Languages & Systems
___ ALGOL
___ COBOL
___ Automatic Programming
___ Debugging & Test
___ Multiprogramming
___ Programming of Files
___ Specific Programs (by Subject)

Language & Intelligence
___ Formal Languages
___ Symbol Manipulation
___ Natural Languages
___ Mechanical Translation
___ Documentation
___ Pattern Recognition
___ Speech Recognition
___ Bionics
___ Self-Organizing Systems
___ Perceptrons
___ Artificial Intelligence
___ Man and the Machine

Computer Mathematics
___ Number Theory
___ Numerical Analysis
___ Functional Approximations
___ Computation of Functions
___ Algebra
___ Matrices
___ Calculus
___ Differential Equations
___ Combinatorial Mathematics
___ Probability
___ Statistics
___ Mathematical Programming
___ Dynamic
___ Linear
___ Higher Order
___ Queuing Theory
___ Theory of Games
___ Digital Simulation
___ Information Theory
___ Channels
___ Coding Theory
___ Signal Analysis
___ Communications Theory
___ Digital Data Transmission

Computer Applications
___ Electrical
___ Mechanical
___ Aeronautical
___ Space
___ Chemical
___ Physics
___ Nuclear
___ Medical
___ Industrial Engineering
___ Governmental
___ Military
___ Transportation
___ Business
___ Management Science

ASTRONAUTICS*

Space Vehicle Subsystems*
___ Electric Power*
___ Guidance & Control*
___ Communications*
___ Instrumentation & Telemetry*
___ Environmental Protection*

Space Vehicles*
___ Structures*
___ Propulsion*
___ Braking*
___ Generalized Systems*
___ Specific Vehicles*
___ Apollo*
___ Atlas*
___ Explorer*
___ Gemini*
___ Mariner*
___ Mercury*
___ OAO*
___ OGO*
___ Saturn*
___ Sputnik*
___ Syncom
___ Telstar*
___ Thor*
etc.*

Space Vehicle Payloads*
___ Scientific*
___ Commercial*
___ Military*

Manned Flight*
___ Astronaut's Supplies*
___ Manned Flight Factors*

Ground Support Complexes*
___ Preflight*
___ Inflight*
___ Flight Termination*

Space Flight Operations*
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___ Solar System*

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